

### **DETAILED ACTION**

1. In response to the Office action mailed on November 20, 2009 the Amendment has been received on December 22, 2009.

Claims 3-5, 7, 9-11, 13, 14, 16-21, 23-27 have been amended.

Claims 1-324 are currently pending in this application from which claims 28-34 are withdrawn from further consideration as being drawn to a nonelected invention.

### ***Election/Restrictions***

2. Claims 28-34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on December 22, 2009.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the second roller (claimed in claims 9+) and the spring mechanism (claimed in claim 12) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

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replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 27, the phrase "the food items can be varied" renders the claim indefinite because it is unclear whether the limitations following the phrase "can" are

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part of the claimed invention. The resulting claim does not clearly set forth metes and bounds of the patent protection desired.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-22 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graves (US PAP 2002/0012419 A1) in view of Koch et al. (US Patent 5,847,382).

With respect to claims 1 and 2, Graves teaches an apparatus for inspecting food items, the apparatus comprising: conveying means (12) for conveying food items in a predetermined direction; means for generating uniform X-ray attenuation image of the food items, further comprising: X-ray emitting means (14) for emitting X-rays through the food items as they are conveyed by the conveyor through the means for forming the food items; X-ray sensing means (16), for collecting X-rays after penetrating through the food items as they are conveyed by the conveyor; processing means, wherein the processing means is adapted to store and/or process X-ray image data (see Fig. 1; paragraph 0004). Graves fails to teach means for forming the food items into a shape of substantially uniform thickness. Koch teaches an apparatus for inspecting food items,

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the apparatus comprising: conveying means (11) for conveying food items in a predetermined direction means for forming the food items into a shape of substantially uniform thickness (see Figs. 1 and 2; column 3, lines 39-47). It would have been obvious to one of the ordinary skill in the art at the time the invention was made to use the means for forming the food items into a shape of substantially uniform thickness as suggested by Koch, in the x-ray imaging apparatus of Graves since such a modification would improve imaging by minimizing thickness or density analysis errors.

With respect to claim 3, Graves teaches that the X-ray sensing means are linear sensors (see paragraph 0004).

With respect to claim 4, Koch teaches that the means for forming the food items are adapted to allow transmission of light to pass through the means for forming the food items into a shape of substantially uniform thickness as well as the formed food items (column 3, lines 50-53).

With respect to claim 5, Koch teaches that the means for forming the food items comprises: a first roller, wherein the first roller is able to rotate freely, or is alternatively, driven by a motor which speed is synchronized with the speed of the conveying means (see Figs. 1 and 2).

With respect to claim 6, Koch teaches that the first roller is positioned substantially perpendicular to the conveying direction (Figs. 1 and 2).

With respect to claim 7, Koch teaches that the means for forming the food items further comprises: an endless belt which is positioned in between the first roller and the

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conveying means, wherein the belt is stretched at a fixed angle with respect to the conveying means (Figs. 1 and 2).

With respect to claim 8, Koch teaches that the angle between the conveying means and the belt is in the range of about  $0^{\circ}$ - $90^{\circ}$  such as about  $50^{\circ}$ - $80^{\circ}$  such as about  $10^{\circ}$ - $50^{\circ}$ , including about  $10^{\circ}$ - $40^{\circ}$  (Figs. 1 and 2).

With respect to claim 9, Koch teaches that the means for forming the food items further comprises: a second roller, wherein the first roller and the second roller are oriented in a parallel fashion on either side (Figs. 1 and 2).

With respect to claim 10, Koch teaches that the first and/or second roller is mounted at a fixed distance from the conveying means, such that a substantially uniform thickness of formed food items in between the roller and the conveying means is obtained as the items pass through the means for generating image of the food items (Figs. 1 and 2; column 3, lines 39-53).

With respect to claim 11, Koch teaches that the first roller and/or the second roller is mounted on a mechanism for allowing variations in the distance between the conveying means and the roller as the food items passes under the roller (Figs. 1 and 2; column 3, lines 50-53).

With respect to claim 12, Koch teaches adjusting the gap between conveyer and means for forming the food items (column 3, lines 44-53) but fails to teach that the Koch teaches that the first and/or second roller is mounted on a spring mechanism. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to use the spring mechanism since it is known that the spring mechanism would

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allow the first and/or second rollers for some degree of tolerance with respect to some differences in thickness or composition of conveyed food items.

With respect to claim 13, Koch teaches that the first roller and/or the second roller is comprised of a hollow cylinder (Figs. 1 and 2; column 3, lines 27-33).

With respect to claim 14, Koch teaches that the means for forming the food items are comprised of a stationary guide (14) (column 3, lines 44-53).

With respect to claim 15, Koch teaches that the stationary guide comprises an elongated member with an overall convex shape in the conveying direction, as seen from the conveying means (column 3, lines 44-53).

With respect to claim 16, Koch teaches that the stationary guide is mounted on a mechanism for allowing variations in the distance between the conveying means and the roller as the food items passes under the roller (column 3, lines 44-53).

With respect to claim 17, Koch teaches adjusting the gap between conveyer and means for forming the food items (column 3, lines 44-53) but fails to teach that the stationary guide is mounted on a spring mechanism. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to use the spring mechanism since it is known that the spring mechanism would allow the stationary guide for some degree of tolerance with respect to some differences in thickness or composition of conveyed food items.

With respect to claim 18, Koch teaches that the means for forming the food items are comprised of a material such as a plastic material (acrylic; see column 3, line 25) that would allow permeation of radiation.

With respect to claim 19, Koch teaches that the means for forming the food items are comprised of a material (acrylic) (see column 3, line 25) that would modify the emitted spectrum of X-rays in a predetermined manner, thus serving as an X-ray filter.

With respect to claim 20, Koch teaches that the stationary guide comprises a perforation along its longitudinal axis (Figs. 1 and 3; column 3, lines 44-53).

With respect to claim 21, Koch teaches a controller for adjusting the amount of pressure exerted by the means for forming the food items (column 3, lines 44-53).

With respect to claim 22, Koch teaches that the adjustment is based on analysis of the surface height of the food items prior to imaging (column 3, lines 44-53).

With respect to claim 25, Koch teaches means for registering the nature, location and quantity of observed bones, bone fragments or other undesired materials in the food items (column 3, lines 61-67).

With respect to claim 26 Koch teaches means for registering which food items, or which part of the food stream, contain bones, bone fragments or other undesired materials, and means for using this information to make decision on further action on the food material, wherein such decision may involve routing or removing the food items accordingly (column 3, lines 61-67).

With respect to claim 27, Koch teaches that the conveying means are comprised of a conveyor wherein a recess or a gap in the conveyor support is provided, such that the distance between the conveying surface and the means for forming the food items are varied by varying the depth, length and/or width of the recess, and the tension of the endless belt (column 3, lines 44-53).

***Allowable Subject Matter***

8. Claims 23 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. With respect to claim 23, prior art fails to teach or make obvious the apparatus comprising: a force sensor for sensing the force of the applied pressure, the force sensor being functionally linked to the controller for adjusting the amount of pressure exerted by the means for forming the food items as claimed in combination with all of the remaining limitations of the base claim and any intervening claims.

10. With respect to claim 24, prior art fails to teach or make obvious the apparatus, according to claim 21, wherein the amount of pressure is adjusted in real-time, based on the degree of compression determined from X-ray data collected from the compressed food items as they pass through the X-ray beam all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to IRAKLI KIKNADZE whose telephone number is (571)272-2493. The examiner can normally be reached on 9:00-5:30.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Irakli Kiknadze

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Primary Examiner, Art Unit 2882

/I. K./ March 26, 2010